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Overview of Imagery Satellite Issues, Activities, and Planning

*Published by the Intelligence Community Staff
for the Director of Central Intelligence*

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September 1976

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OVERVIEW OF IMAGERY SATELLITE ISSUES, ACTIVITIES AND PLANNING

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FOREWORD

This document presents a series of policy issues which are critical to the future course of U.S. satellite imagery activities and the planning for them. It also presents an overview of the current and planned satellite imagery activities and addresses the strategy reflected by these activities and plans.

In the course of producing this document, it became apparent that the primary purpose of it should be to highlight these critical policy issues. This course of action seemed all the more appropriate because these policy issues are not within the purview of the individual organizations participating in the national program of satellite imagery activities. Some of the issues are for the Committee on Foreign Intelligence to resolve, while others will require resolution by the National Security Council.

Thus, this document is not a comprehensive and integrated operating plan for national satellite imagery activities. In the absence of a centralized national imagery policy authority, probably the best that can be achieved in this respect is a greater degree of coordination of the several individual activities. However, whether the imagery community, as currently organized, provides the desired level of flexibility and efficiency is itself at issue.

Whatever the organizational case, the primary message of this document is this: Better management and planning for satellite imagery-related activities can proceed only if guidance is provided in the form of decisions on the policy issues presented herein.

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SUMMARY

Before it is possible to develop an integrated plan for the conduct of national imagery satellite activities which is both comprehensive and functional, decisions are required on a number of major policy issues.

These issues fall into two series. First, there are issues which concern matters of U.S. national policy, thus requiring resolution at the National Security Council level. And, second, there are issues which are wholly concerned with Intelligence Community activities and can be resolved by the Committee on Foreign Intelligence.

National-Level Issues

Those issues concerning U.S. imagery satellite activities which must be resolved at the National Security Council level are the following:

- How should U.S. intelligence and civil imagery programs be coordinated in order to realize consistent and compatible national objectives?
- Should there be a unified U.S. policy to protect the operation, products, and technology of satellite imagery programs?
- Is the projected risk of loss of the National Reconnaissance Program imagery systems acceptable?
- To what degree should U.S. military forces rely on national intelligence imagery satellite capabilities for intelligence needed to conduct military operations?

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- What is the U.S. national policy regarding the employment of an active imagery satellite system?

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- Should the U.S. develop a single unified policy for allocating and managing the resources necessary to support the processing and exploitation of imagery from both the intelligence and civil imagery collection programs?

Intelligence Community Issues

Those issues concerning U.S. imagery satellite activities which are directly associated with the Intelligence Community, and are appropriate for resolution by the Committee on Foreign Intelligence, are the following:

- In the context of the entire National Foreign Intelligence Program (NFIP), what is the desired role for the satellite imagery program?
- What are the validated national intelligence needs which imagery satellite resources can satisfy?
- In terms of the decisions reached concerning the role and resource level of the satellite imagery program, which, if any, of the U.S. satellite imagery systems can be terminated?
- What portion of NFIP funds and manpower resources should be allocated to the satellite imagery program?
- Is the present imagery community organization, and the tasking and management structure, adequate to respond effectively to present and anticipated demands?
- Should the Intelligence Community develop an integrated, centrally directed plan to manage the Community's imagery processing and exploitation resources?

All of these Intelligence Community issues have been the subject of continuing review. In support of CFI decisions required in November 1977, a major effort is underway to conduct a Community-wide review of imagery needs and the resources required to satisfy them.

However, before any effort is directed toward better integration of these semi-independent activities, to become a more comprehensive and more functional operating plan, it is essential that clear and authoritative resolution of these issues is forthcoming.

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I. INTRODUCTION AND BACKGROUND

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A. PURPOSE AND SCOPE

Development of a comprehensive plan for the conduct of national imagery satellite activities is a principal project listed in the DCI's Resource Management Objectives for the Intelligence Community.

This document presents those national policy issues and Intelligence Community management policy issues which require resolution before further progress can be made toward developing such a plan.

This document also presents a brief overview of U.S. imagery satellite activities and plans to date, in order to put these critical issues into a logical framework and present them in a context which is more easily understood.

The current intention is also to publish, separately, a series of annexes which are companion pieces to this document. These annexes present a much more detailed account of the U.S. intelligence imagery satellite activities now being conducted and planned than is contained herein. The annexes, now in preparation, cover the topics of imagery collection requirements, collection systems, exploitation, dissemination, military operational requirements, and non-military applications.

B. EVOLUTION OF IMAGING SATELLITE PROGRAMS

Since 1960, satellite photography has provided U.S. intelligence and policy communities a means of observing activities worldwide, particularly in the Communist countries. The accumulated photography contains a record of the physical dynamics of military forces, economic growth, and the geophysical environment of these areas.

The first satellite reconnaissance imagery was returned from space by a system designated CORONA in August 1960. CORONA was designed to obtain photographic coverage of broad areas, to aid in the identification and location of Soviet strategic weapons systems. The first CORONA acquired more photographic imagery of the Soviet Union than was provided by all of the U-2 missions flown over the Soviet Union. The CORONA Program spanned 12 years, ending in May 1972.

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II. THE ISSUES

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A. AN OVERVIEW—POLICY PERSPECTIVES

It has become increasingly apparent that the U.S. can no longer afford multiple overlapping civil and intelligence programs which pursue by different routes parallel or conflicting national objectives. Executive and Congressional guidance has made it abundantly clear that budgetary justification must be traceable to national objectives, and to national intelligence needs.

The projected future environment in which these programs must function suggests that expanding capabilities and demands will tend to exacerbate rather than alleviate resource problems.

Most of the key intelligence needs of today are expected to continue into the 1980s. However, their relative priorities can be expected to change. Additionally, there will be an increasing demand for a global real-time information capability spurred on by available technical capabilities in communications, computers, and collection modes. The use of space for communication, navigation, and the collection of political, economic, military, and scientific and technological information will continue to expand.

The utilization of and need for energy and raw materials will intensify international competition for sources of energy and other natural resources. The achievement of national objectives through political and economic means will tend to dominate the spectrum of conflict; however, destabilizing civil and national hostilities are likely, particularly in the "Third World." Overall, the current concentration of imaging capability in the Northern Hemisphere, and particularly the Communist world, will need to be readjusted to expand the coverage of third-world countries.

Arms control and treaty verification issues will continue to be paramount in the 1980s. Nuclear proliferation will increasingly affect major power relationships. For example, a nuclear capability in Brazil, Argentina, and South Africa by 1990 could serve to complicate these issues considerably.

The space environment itself is also subject to the possibility of hostile action. As weapons technology evolves, deployment of space-borne or ground-based anti-space system weapons could occur. However, continued dominance of the space environment by the U.S. and USSR suggests that a space conflict would be dependent upon a serious confrontation involving the two countries.

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B. STRATEGY

The national strategy for satellite imagery is reflected explicitly in program milestones for our current systems. Strategy is expressed implicitly in documentation at the national level, e.g., the *DCI's National Foreign Intelligence Program Recommendation: FY 1977-1981*. These strategy expressions call for an imagery intelligence

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A key element of our current national imagery satellite strategy—and indeed of all U.S. satellite overflight efforts—is universal acceptance of the right of overflight and the continuance of a non-hostile space environment.

The question of our ability to maintain this strategy, the uncertainties in the changing world environment, plus the steadily increasing pressure on resources, are the primary factors underscoring the need for timely resolution of certain key policy planning issues.

C. POLICY PLANNING ENVIRONMENT

The rationale for current imagery policy and its implementation is largely an outgrowth of the direction and planning required for utilization of present satellite imagery systems. However, it is clear from the context of the following paragraphs, quoted from a 1975 memorandum from the Chairman of the National Security Council establishing the Standing Committee on Space Policy, that these activities are necessarily being drawn into a larger integrated space policy:

“The Committee should review the relationship between civil and intelligence space programs, the military significance of certain civil space programs, and any relevant international considerations. The Committee should propose for the President’s consideration, appropriate new policies or changes to existing policies, and be a forum for the interpretation and implementation of such policy.”

The final charge to the Committee in addressing the issues concerning the national space policy, as it relates to the civil/military

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interfaces, emphasizes the critical issues pertinent to the national imagery policy and strategies:

“DOD and NASA have requested that at an early opportunity the Committee examine the international political considerations of remote earth sensing, the protection of sensitive space technology and the public release of space data and information.”

D. ISSUES REQUIRING NATIONAL-LEVEL POLICY DECISION

Effective planning for satellite imagery activities cannot be pursued without timely resolution of a number of key policy issues. These include a number of specific issues which require decision at the NSC level.

These issues are interdependent and affect the total NRP, not merely imaging satellites. For example, the issues relating to [redacted] require consideration of the impact of a particular decision on the total intelligence program.

Those issues concerning U.S. imagery satellite activities which must be resolved at the National Security Council level are the following:

1. Expanded Applications and Usage of Satellite Imagery.

ISSUE: How should the intelligence and civil imagery programs be coordinated to realize consistent and compatible national objectives?

In recent years there has been an expansion in the applications and usage of satellite imagery within the U.S. Government. Civil users are now obtaining meaningful contributions from intelligence satellites. Imagery applications include those related to agriculture and crop forecasts, political-territorial issues, energy/geologic exploration, transportation systems, urban studies, population, settlement and land-use problems, narcotics control, natural disasters, and water-resources assessments. (It should be noted that aircraft photography can often adequately meet the civil requirements, e.g., in the case of the recent Guatemalan earthquake.)

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How effectively and extensively these applications will be pursued will depend on the following:

- a. availability of satellite imagery in sufficient quantity and quality to address new classes of problems;
- b. continued development and prioritization of imagery requirements based upon national-level policy needs;
- c. development of imagery-sensor packages by both the National Reconnaissance Office (NRO) and NASA that are complementary in the information they provide;
- d. Policy decisions affecting the utilization of classified programs by potential civil users; and
- e. the existence of an effective organizational structure to integrate intelligence and civil applications with collection capabilities.

National policy objectives concerning foreign political, economic, technical, and military events tend to cause the distinction between Intelligence Community and non-intelligence interests to disappear at the national level. Both the technology and application of the intelligence and civil programs are merging despite the efforts of NASA and the NRO to emphasize the differences and unique aspects of their programs.

The perception by foreign states of U.S. space policies and activities is of interest to both NASA and the Intelligence Community. The question is whether foreign states perceive these activities as contributing to their own vital interests, or, at the very least, as not being harmful to those interests. It is in this instance that the entire issue of expanding applications and the necessity for policy decision comes into focus. The awareness and availability of more and better satellite imagery data, regardless of its source, is likely to give rise to anxiety and opposition in the international arena unless it is accompanied by applications which can be demonstrated to be of positive and practical advantage to those concerned, and/or a program for controlling the availability of this data. This immediately brings the NASA policy of unlimited data distribution into question.

Both intelligence and non-intelligence programs and output must be judged in the context of the support they provide to larger national objectives and policies. Usage of the imagery-derived data and the degree of data dissemination must be weighed against policy interests in each case, particularly national security considerations.

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Development of consistent and compatible NASA and Intelligence Community programs requires policy decisions affecting the jurisdictional authority and, eventually, the organizational budgets of all these organizations. Currently such determinations tend to be made organizationally. The resultant "policies" are simply the product of organizational bargaining. In place of this, national policy objectives need to be developed irrespective of individual organizations.

2. Security.

ISSUE: Should there be a unified U.S. policy to protect the operation, products, and technology of satellite imagery programs?

Expansion of both Intelligence Community and non-intelligence programs has resulted in a merging of the programs' technology and applications. This overlap causes security policy decisions—or the lack thereof—in one program, to directly affect the security of other programs. For example, our "national technical means of verification" and, in turn, our U.S./Soviet arms limitation policies are, in large measure, dependent upon our intelligence satellite imagery systems. Security control is necessary to minimize the danger that greater knowledge of U.S. intelligence satellite imagery capabilities, operations, and materials could result in meaningful degradation of information gain or even in a hostile space environment and complete denial.

Protecting the "fact of" the U.S. satellite intelligence effort involves more than just the question of the Soviets or others ultimately discerning the capability of U.S. systems. Of equal importance is the protection of an international climate in which the Soviets and others will continue to allow the United States to collect data on a noninterference basis, or, conversely, identification of those conditions that would encourage interference.

Expanded application of civil satellite imaging programs has brought about wide dissemination of these products to all interested users, since these programs are not encumbered by security controls. And, broad utilization of the products from these imaging programs probably does, for the most part, reinforce the continued peaceful use of space and encourage a continuing benign environment.

Whether certain U.S. national interests are served by the present civil satellite imaging program and its attendant procedures is not at issue. The security issue in this context arises from the fact that the intelligence satellite imaging programs, which also serve important

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U.S. national interests, are threatened with an unacceptable degree of exposure as NASA expands its activities in the civil satellite programs.

Looked at simply, the United States is operating a satellite overflight program with two separate and distinct components and policies. One component (NASA) is operated on the assumption that public release and broad dissemination of its data is in the best interests of the nation and, indeed, of mankind. The second component (Intelligence) takes the position that public admission and dissemination is not in the national interest, since the intelligence product provides a vital input to national security and international stability, and exposure could lead to curtailment or cessation of the program. However, both compartments are ultimately dependent upon a universal acceptance of the right of overflight and the maintenance of a benign space environment. To this extent, the "security" of both compartments is inseparable.

Effective security control, like the expansion of applications, is dependent upon a consistent and compatible policy for both intelligence and civil programs. Ultimately, the question is what can and cannot be publicly released, based upon the best interests of the United States.

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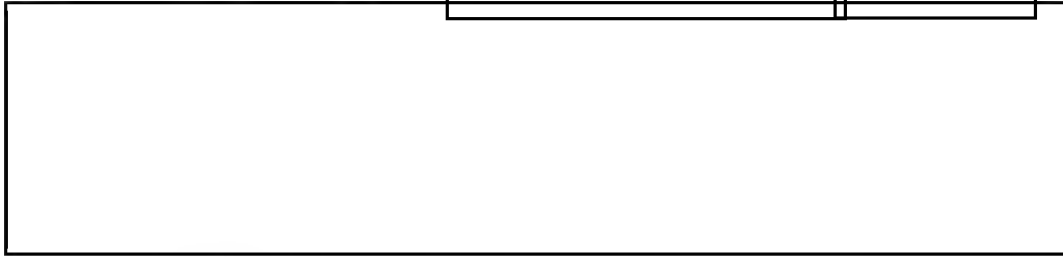
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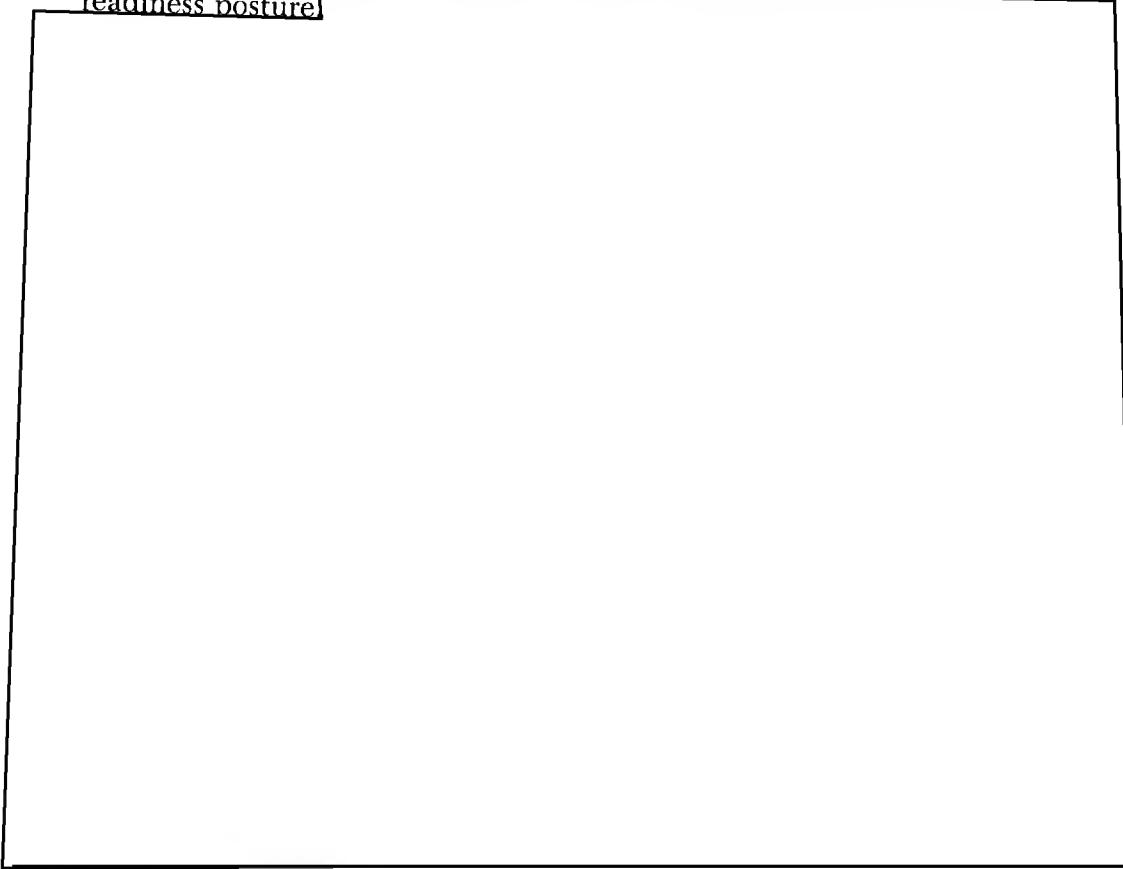


4. Military Tactical Usage.

ISSUE: To what degree should U.S. military forces rely on national intelligence imagery satellite capabilities for intelligence needed to conduct military operations?

Since the first CORONA launch in 1960, military forces have been provided with satellite imagery-derived intelligence to support their readiness posture

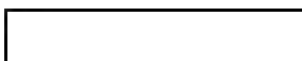
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7. Resource Utilization.

ISSUE: Should the U.S. develop a single unified policy for allocating and managing the resources necessary to support the processing and exploitation of imagery from both the intelligence and civil imagery collection programs?

The requirements for intelligence to support U.S. policy clearly are expanding beyond the purview of traditional intelligence collection. The distinction between the goals of the intelligence and civil imagery programs is disappearing, the methodologies for exploitation have become more complex, and there is increasing demand and competition for the resources needed to utilize the product of imagery collection more completely. The U.S. Government cannot afford totally independent and parallel processing and exploitation structures, one to support the intelligence program and another for the civil program. Consequently, it is necessary to have some clear rationalization of how resources will be applied and within what priority.

E. ISSUES FOR RESOLUTION BY THE COMMITTEE ON FOREIGN INTELLIGENCE

The issues which are appropriate for resolution by the Committee on Foreign Intelligence concern the desired role for the imagery program, the development and operation of collection systems, and management and control of the imagery processing, exploitation and dissemination activities. Underlying each of these considerations is the

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matter of allocating Intelligence Community resources and justifying resource expenditures in an era of steadily increasing budget pressures. Specifically, these issues are the following:

1. Role of the Satellite Imagery Program.

ISSUE: In the context of the entire National Foreign Intelligence Program (NFIP), what is the desired role for the satellite imagery program?

2. Validated Imagery Needs.

ISSUE: What are the validated national intelligence needs which should be satisfied by imagery satellite resources?

3. Resource Allocation.

ISSUE: What portion of NFIP funds and manpower resources should be allocated to the satellite imagery program?

4. Required Collection Systems.

ISSUE: In terms of the decisions reached concerning the role and resource level of the satellite imagery program, which, if any, of the U.S. satellite imagery systems can be terminated?

5. Imagery Community Tasking Management.

ISSUE: Is the present imagery community organization and its management and tasking structure adequate to respond effectively to present and anticipated demands?

6. Imagery Community Exploitation Management.

ISSUE: Should the Intelligence Community develop an integrated, centrally directed plan to manage the Community's imagery processing and exploitation resources?

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III. OVERVIEW OF NATIONAL IMAGERY PROGRAM ACTIVITIES AND PLANS

To help place these issues in a more meaningful context, this part of the document describes the activities and planning initiatives which are currently conducted in the National Imagery Program.

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A. INTELLIGENCE NEEDS AND IMAGERY COLLECTION REQUIREMENTS

The activities of the National Imagery Program, like those of our National SIGINT and Human Sources Programs, are driven by statements of objectives, priorities, and needs issued by the DCI.

1. Guidance Documents.

Currently, four national-level documents express these objectives and needs:

a. *Objectives for the Intelligence Community.*

This document is prepared annually for the President by the Director of Central Intelligence. It contains both substantive intelligence objectives and resources management objectives.

The substantive intelligence objectives are given greater specificity in the *Key Intelligence Questions* (see below) and constitute the primary guidance for our foreign intelligence effort for the current fiscal year.

The resource management objectives deal with the means for achieving the substantive objectives. They include specific milestones for achievement in all categories of resource management. For example:

- (1) Objective 1 deals with evaluation of Community performance and related activities;
- (2) Objective 2 deals with program and budget review activities;
- (3) Objective 3 deals with planning and guidance activities;
- (4) Objective 4 deals with research and development activities;
- (5) Objective 5 deals with efforts to review and improve the substantive requirements mechanism (a key area of imagery interest); and
- (6) Objective 6 deals with activities in the interaction and mutual support between national and departmental/command (tactical) intelligence systems.

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These questions are developed by the Intelligence Community in coordination with the National Security Council Intelligence Committee (NSCIC). They are issued as guidance to the Intelligence Community for the collection and production of intelligence, and cover only subjects of major importance to national-level consumers. Departmental and tactical intelligence needs, which are developed by the Department of Defense, are given special attention in the preparation of KIQs.

c. *Perspectives for Intelligence 1976-1981.*

Perspectives for Intelligence is issued annually by the DCI to provide general guidance to the Intelligence Community covering a period of five years into the future. This document is composed of four parts:

- (1) Part I is a general overview of the international political, economic, and security environment;
- (2) Part II is a broad statement of the needs the Community will be expected to meet during the period;
- (3) Part III provides specific guidance concerning activities which should be initiated or on which planning should commence; and
- (4) Part IV provides guidance for implementation of *Perspectives* against major national intelligence problems.

d. *U.S. Foreign Intelligence Priorities for Fiscal Years 1977-1981.*

This annual Attachment to DCI Directive (DCID) 1/2 is a comprehensive statement of the U.S. needs for substantive intelligence during peacetime and through any period of tension into the onset of hostilities involving the United States. It is intended to serve as basic guidance for planning and programming the U.S. foreign intelligence effort. The Attachment states that it provides specific priorities for elements of the *Objectives* and *Key Intelligence Questions* which are expected to be of continuing national concern. It also provides a priority system covering topics of overall national intelligence interest for each country of the world on which intelligence attention should be focused over the mid-term period.

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2. Intelligence Needs.

Needs for intelligence to be obtained through imagery collection are initially identified by the national agencies, military services, and Unified and Specified Commands. These expressions of need undergo a competitive process designed to eliminate duplication and to delete those of insufficient priority to warrant the expenditure of satellite resources. A formalized procedure is followed which provides critical review and validation or deletion at several levels including final review and approval or disapproval by representatives of the Director of Central Intelligence (DCI) before these expressions are used to recommend program actions to task or modify operational systems or to build new systems.

Those expressions of need which survive this validation process are known as "collection requirements." Expenditure of limited resources is considered in weighing each of these requirements. Prioritization is a vital part of the process. The instrumentality for day-to-day execution of guidance and the detailed tasking of National Reconnaissance Program systems is the DCI Committee on Imagery Requirements and Exploitation (COMIREX).

U.S. intelligence needs derivable from satellite imagery can be grouped into four basic categories:

a. *Political.*

The formulation and execution of U.S. foreign policy requires intelligence which will support the negotiation of cease-fires, treaties, and other agreements and compliance with their provisions; intelligence related to the production and distribution of illegal drugs destined for the U.S.; and intelligence on armed conflict not involving U.S. forces.

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b. *Military.*

The formulation and execution of U.S. military policy requires intelligence which will provide warning of attack involving the U.S.; the size, disposition, and capabilities of opposing strategic and tactical

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forces and their support facilities; the military production capacity and output of opposing countries; capacity and output of and the production of maps and strategic target locations.

c. Science and Technology.

Formulation of U.S. military, education, economic, and energy policy requires information on the technical/scientific characteristics of existing and prospective opposing military systems, and on the status of foreign nuclear and other applied science. Among other purposes, such intelligence is needed for policy formulation to prevent technological surprise.

d. Economic.

The formulation and creation of U.S. economic policy requires the monitoring of agricultural, manufacturing, and business trends worldwide.

Typical examples where satellite imagery has been used include the monitoring of off-shore oil and gas drilling activities.

3. Collection Guidance.

National-level guidance for imagery collection requirements to support U.S. intelligence needs has three levels of specificity:

a. Broad Requirements for Collection System Development.

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This guidance delineates intelligence needs and assesses these needs in terms of existing or programmed collection systems and potential technical means for overcoming gaps in capabilities. It serves as the basis for initiating development of new systems. The

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b. Standing Requirements for Planning the Operational Use of Existing or Programmed Collection Systems.

These requirements take into account the specific capabilities of operational collection systems and the targets and areas against which the collection capability should be used.

The experience and expertise of the Intelligence Community are focused through the COMIREX to ensure that each requirement lends itself to satisfaction through imagery collection and that each requirement is of sufficient importance to warrant the use of national collection resources.

c. Mission-to-Mission and Current Guidance.

Prior to every imagery satellite mission, COMIREX reviews the status of validated collection requirements across the entire range of problems to which overhead imagery can contribute. Some of these requirements are generated by current events. Others reflect the near-term needs of the organizations dependent on satellite imagery. Reassessing the status of these two categories of requirements prior to each mission serves to give the mission greater value and utility than it would possess if it were programmed against the standing requirements alone.

4. Imaging Requirement Types.

Director of Central Intelligence requirements for current imaging systems are divided into two general types—search and surveillance:

a. Area Search Requirements.

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purposes. The remaining land mass of the earth consists of about 50 million square nautical miles of territory and has only a limited number of continuing area imagery requirements.

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The principal continuing intelligence problems which involve area search are those involving potential deployment of new weapons.

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Strategic Arms Limitation agreements have prohibitions on various offensive and defensive deployments, as well as limitations at existing sites. Search imagery plays a major role in verifying

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Third World nuclear capabilities are expanding. During the next half of this decade, these efforts may prove difficult to detect and monitor.

In many countries, general developments which involve new activity or programs at previously undeveloped locations will require search imagery for initial detection.

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Search-type imagery collection requirements prepared by the COMIREX recently have emphasized the direct relationship between area search imagery collection and the intelligence problems which that collection is intended to solve. As the [redacted] becomes operational and assumes a share of the total imagery requirements, additional modifications to the requirements statements—particularly search requirements—are anticipated to take advantage of [redacted]

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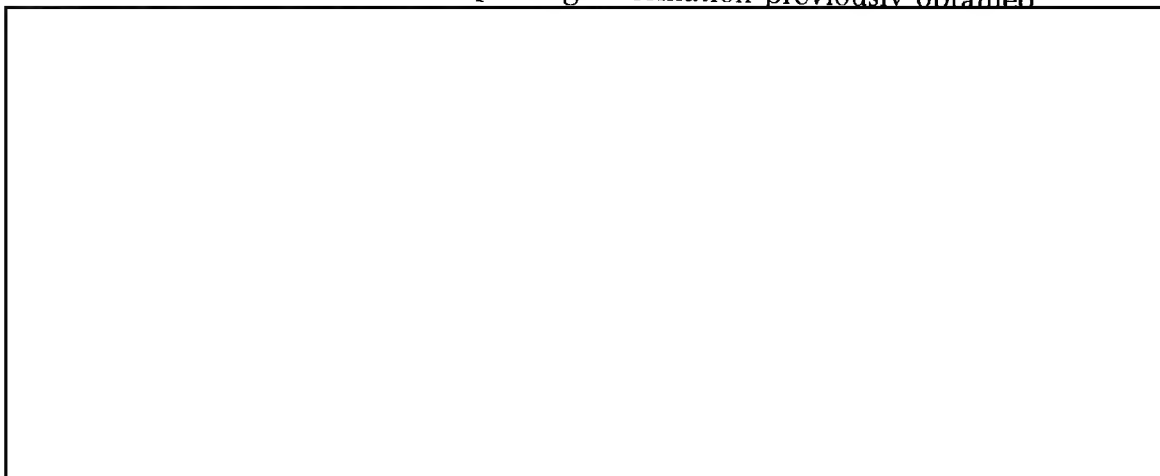
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b. Surveillance Requirements.

Surveillance is the periodic coverage of installations, objects, or activity for the purpose of updating information previously obtained

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Some of the most important problem sets concern indications and warning of hostile military action against the U.S. The current [redacted]

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In addition to the periodic surveillance imagery required to monitor the status of foreign activities and upgrade our knowledge of them in a systematic way, it is necessary to acquire imagery to fulfill specific, time-dominated intelligence needs—those known as “current intelligence” needs.

Collection requirements to support current intelligence needs include:

- (1) crisis reconnaissance—imagery of an anticipated or on-going confrontation or conflict where U.S. interests are involved;

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(2) current events—any time-limited activity of which imagery is needed;

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(4) follow-up imagery—that needed to amplify or classify information gained from previous imagery;

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5. Summary.

The development of guidance, tasking, collection, and exploitation is continuous in all aspects. As new imagery is acquired, results are assessed and new evaluations of intelligence needs are prepared taking the previous results into account. The Intelligence Community continuously assesses intelligence needs, and, through COMIREX, translates them into appropriate collection requirements. This assures that, within the capabilities of existing systems and programs, maximum responsiveness to intelligence needs is maintained at all times.

B. SATELLITE IMAGERY COLLECTION SYSTEMS

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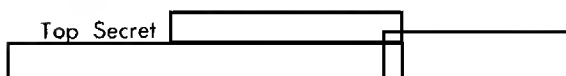
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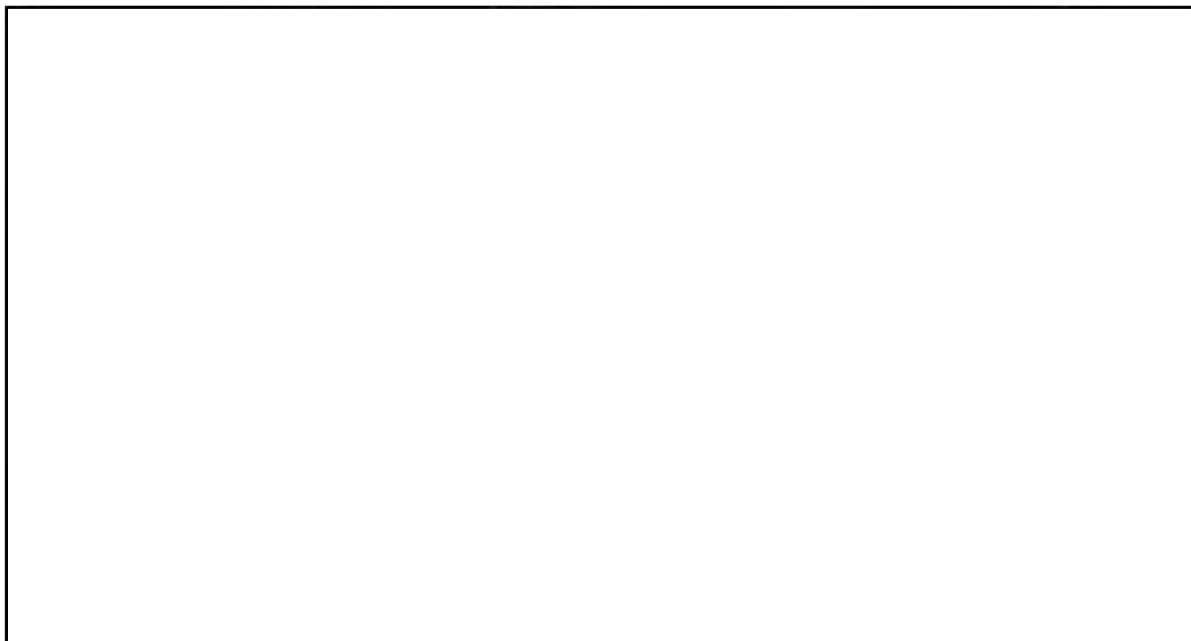
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2. Mid-Term Planning (1977-80).

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3. Long-Range Collection Perspectives and Estimates (1980-90).

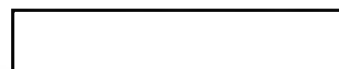
Most of the key intelligence needs of today are expected to continue into the 1980s; however, their relative priorities can be expected to change. Thus, today's needs which drive many current intelligence activities do not provide sufficient guidance to conduct meaningful planning for effective methods of operation in the 1980-90 time frame.

In the 1980s it is reasonable to expect a world which is more economically interdependent, with competition for energy sources and raw materials having become more intense.

Arms control issues will certainly continue into the 1980s. These issues will be greatly complicated by an expected proliferation of nuclear capabilities during this period.

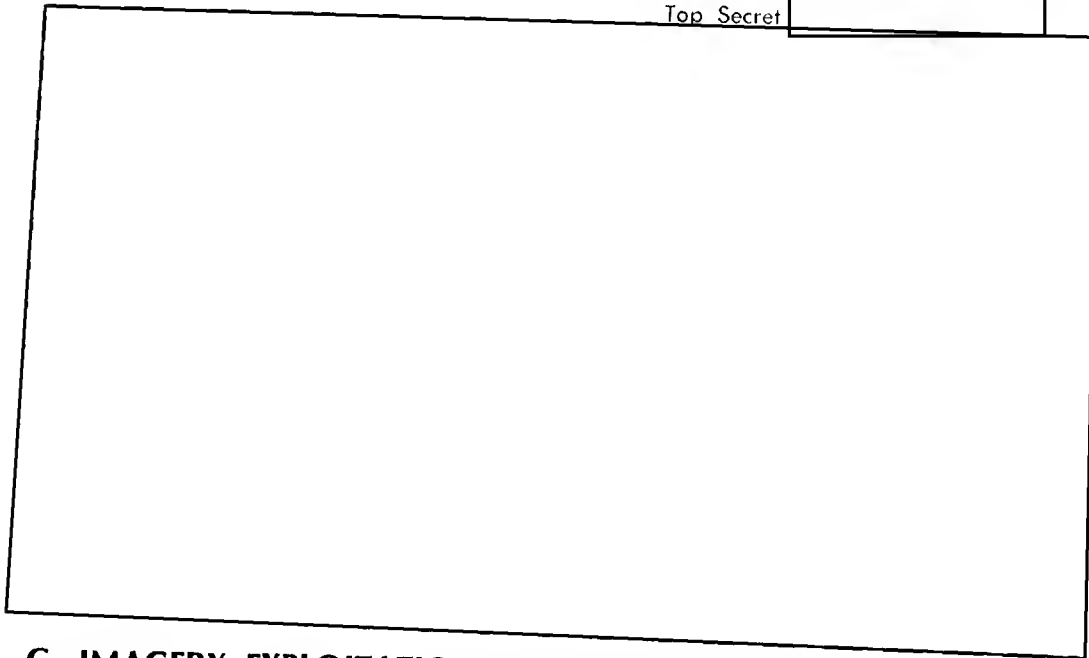
Both the economic expansion and the nuclear proliferation will involve areas of the world and specific countries which are not now routinely photographed, calling for expansion or adjustment in the U.S. imaging program.

The use of space as a medium for communication, navigation, and intelligence collection will expand, as will the potential for space-borne weapon systems, and ground-based anti-satellite systems.



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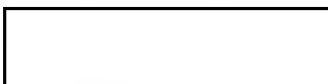
C. IMAGERY EXPLOITATION AND EXPLOITATION REQUIREMENTS

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I. Authority and Concept.



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continue or alter its current policy of open distribution of imagery acquired from unclassified NASA earth-sensing satellites.

Beyond the capabilities of satellite systems and image qualities, the most important asset to the exploitation process is data base operation and maintenance. Steps are under way to improve storage and retrieval of both imagery and other data in this time period.

4. Long-Range Perspectives for Imagery Exploitation.

Principal factors which will influence the exploitation process during the late 1970s and the 1980s and their estimated impact are:

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c. Continued emphasis on arms control monitoring will be made more difficult by the proliferation of nuclear capabilities in the world and by deployment of mobile strategic weapon systems;

d. Increased importance of economic intelligence may require revised tasking and require additional training of imagery analysts.

D. DISSEMINATION OF IMAGERY AND IMAGERY DATA

1. Introduction.

Requirements for imagery dissemination are prescribed by the Exploitation Subcommittee (EXSUBCOM) of COMIREX in response to Community needs. Imagery products to be disseminated include film, exploitation data, and printed matter. Additional imagery-related material which must be disseminated includes data on target coverage, film indexing, camera performance evaluation, mapping, cloud coverage/general weather, requirements satisfaction, and overall system performance evaluation. The dissemination process is constantly moving data, whether it be the film products, data on operational control and management of a mission under way, future mission planning data, or exploitation end products.

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well be that new applications will require that intelligence imagery be increasingly used for civil applications. If this proves to be the case, plans will have to be developed to provide for expanded dissemination of imagery from National Reconnaissance Program satellites to increasing numbers of U.S. civil agencies;

c. Security controls could be modified to allow expanded use of imagery products.

4. Long-Term Plans (1980-90).

The pressures of increasing population, dwindling resources, realignment of major power relationships and emergence of new power centers, nuclear proliferation, and mutual economic interdependence will pose hitherto unknown requirements on the intelligence function. Financial pressures as well as the value of having timely and dependable information for U.S. decision makers will alter the traditional delineations between departmental and national intelligence entities and their civil counterparts concerned with agricultural, financial, and commercial intelligence.

These scenarios clearly will demand a highly responsive intelligence dissemination system. The demands on information handling, processing, storage, and retrieval systems, and on analyst support systems will be heavy and continuous. Proper and imaginative development of state-of-the-art systems for information handling will only be possible in the 1980-90 time frame if strong centralized management and control exists.

E. INTELLIGENCE COMMUNITY MAJOR PLANNING MILESTONES

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c. *Long-Term Exploitation Issues.*

(1)

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(2)

- (3) Civil Uses of Satellite Imagery. The area of civil applications has perhaps the greatest potential for impact on the intelligence imagery exploitation community. Efforts have already been successful in using satellite imagery for crop analysis, mineral surveys, watershed and drainage analyses, disaster assessment, pollution measurements, and other areas which extend the traditional uses of intelligence imagery. All indications point to an increased use of imagery assets for such applications in the future. If this occurs, it will require attendant increases in resources expended for exploitation.

4. Dissemination.

a. *Current Costs Associated with Dissemination.*

Community costs associated with the dissemination of satellite imagery are shown in Figure 9, Imagery Dissemination Costs. The

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